

## Amendments of the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the above-identified patent application:

### Listing of Claims

1. (currently amended) A method for analyzing price data, ~~that represents~~ representing price in a financial system that varies over time, said method comprising:
- beginning at a first initial moment, acquiring
- 5 said price data during an initial first duration and determining an initial first range of said price data between a minimum value during said initial first duration and a maximum value during said initial first duration;
- comparing said first range of said price data
- 10 during said initial first duration to a range of said price data expected, based on Brownian motion, during said initial first duration;
- ~~when said first range of said price data during said initial first duration equals said range of said price~~
- 15 ~~data expected, based on Brownian motion, during said initial first duration, concluding that said system is varying erratically;~~
- when said first range of said price data during said initial first duration exceeds said range of said price
- 20 data expected, based on Brownian motion, during said initial first duration, concluding that said system is varying in a trend; and
- when said first range of said price data during said initial first duration is less than said range of said
- 25 price data expected, based on Brownian motion, during said initial first duration, concluding that said system is congesting.

2. (previously presented) The method of claim 1 wherein said comparing comprises comparing said initial first range of said price data to a generated Brownian motion standard.

3. (previously presented) The method of claim 2 further comprising, after said acquiring and before said comparing, applying bootstrapping techniques to said price data.

4. (currently amended) The method of claim 1 further comprising:

beginning at said first initial moment,  
acquiring said price data during an initial second duration of  
5 which said initial first duration is a multiple and  
determining an initial second range of said price data between  
a minimum value during said initial second duration and a  
maximum value during said initial second duration; wherein  
said comparing comprises:  
10 computing an actual relationship of said  
initial first range to said initial second range and comparing  
[[an]] said actual relationship of said initial first range to  
said initial second range to an expected relationship of said  
initial first range to said initial second range, ~~and~~  
15 ~~determining from said comparison how said system is varying.~~

5. (currently amended) The method of claim 4 wherein:

~~said comparing and determining comprises:~~  
computing an actual relationship comprises forming a ratio of  
5 said initial first range to said initial second range;  
and[[:] ]

said comparing and determining comprise:  
~~when said ratio equals a square root of said~~  
~~multiple concluding that said system is varying erratically;~~

10                   when said ratio exceeds [[said]] a square root of said multiple, concluding that said system is varying in a trend[[;]], and

                  when said ratio is less than said square root, concluding that said system is congesting.

                  6. (currently amended)     The method of claim 4 further comprising:

                  beginning at a subsequent initial moment, acquiring said price data during a subsequent first duration  
5   and determining a subsequent first range of said price data between a minimum value during said subsequent first duration and a maximum value during said subsequent first duration;

                  beginning at said subsequent initial moment, acquiring said price data during a subsequent second duration  
10   of which said subsequent first duration is said multiple and determining a subsequent second range of said price data between a minimum value during said subsequent second duration and a maximum value during said subsequent second duration;  
[[and]]

15                   ~~comparing~~ computing an actual relationship of said subsequent first range to said subsequent second range; and

comparing said actual relationship of said subsequent first range to said subsequent second range to an expected relationship of said subsequent first range to said subsequent second range, and determining from said comparison of said actual relationship of said subsequent first range to said subsequent second range to said expected relationship of said subsequent first range to said subsequent second range  
20                   how said system is varying.  
25

                  7. (currently amended)     The method of claim 6 further comprising repeating, at respective multiple additional subsequent initial moments:

[[said]] acquiring said price data during each  
5 respective subsequent first duration;  
acquiring said price data during each  
respective subsequent second duration;  
computing a respective actual relationship of  
each respective subsequent first range to each respective  
10 subsequent second range; [[,]]  
~~said determining and said comparing at multiple~~  
~~additional subsequent initial moments~~ each respective actual  
relationship of each respective subsequent first range to each  
respective subsequent second range to [[an]] a respective  
15 expected relationship of [[said]] each respective subsequent  
first range to [[said]] each respective subsequent second  
range; and  
determining from [[said]] each respective  
comparison how said system is varying.

8. (currently amended) The method of claim 7  
wherein ~~said comparing and determining comprises~~, for each of  
said initial moments:  
said computing a respective actual relationship  
5 of each respective subsequent first range to each respective  
subsequent second range comprises forming a ratio of [[said]]  
each respective initial first range to [[said]] each  
respective initial second range; and  
said comparing and determining comprises:  
10 ~~when said ratio equals a square root of said~~  
~~multiple, concluding that said system is varying erratically;~~  
when said ratio exceeds [[said]] a square root  
of said multiple, concluding that said system is varying in a  
trend[[;]], and  
15 when said ratio is less than said square root,  
concluding that said system is congesting.

9. (currently amended) The method of claim 8 further comprising comparing respective ones of said ratio for two consecutive ones of said initial moments and:

~~when each of said ratios equals a square root of said multiple, concluding that said system is varying erratically;~~

when each of said respective ones of said ratio exceeds ~~[[said]]~~ a square root of said multiple and a subsequent respective one of said ratio exceeds a prior  
10 respective one of said ratio, concluding that said system is varying in a trend and said trend is accelerating;

when each of said respective ones of said ratio exceeds said square root and a prior respective one of said ratio exceeds a subsequent respective one of said ratio,  
15 concluding that said system is varying in a trend and said trend is decelerating;

when each of said respective ones of said ratio is less than said square root and a prior respective one of said ratio exceeds a subsequent respective one of said ratio,  
20 concluding that said system is congesting and said congestion is accelerating;

when each of said respective ones of said ratio is less than said square root and a subsequent respective one of said ratio exceeds a prior respective one of said ratio,  
25 concluding that said system is congesting and said congestion is decelerating;

when a prior respective one of said ratio is less than said square root and a subsequent respective one of said ratio exceeds said square root, concluding that said  
30 system has moved from congestion into an ~~accelerating~~ a trend;  
and

when a prior respective one of said ratio exceeds said square root and a subsequent respective one of

said ratio is less than said square root, concluding that said  
35 system has moved from a ~~decelerating~~ trend into congestion.

10. (currently amended) The method of claim 9  
further comprising:

when said system is in a current condition of  
congestion or trend, comparing respective ones of said ratio  
5 for three consecutive respective ones of said initial moments  
separated by equal time intervals; and

deriving, from said comparison of said  
respective ones of said ratio for three consecutive respective  
ones of said initial moments, a prediction of when said system  
10 will move from [[a]] said current condition of congestion or  
trend to another condition of congestion or trend.

11. (currently amended) The method of claim 10  
further comprising displaying said prediction in the form of a  
closed curve with price data points from said three  
consecutive respective ones of said initial moments identified  
5 on said closed curve.

12. (previously presented) The method of claim 1  
further comprising displaying said initial first range of said  
price data and said expected range of said price data.

13. (original) The method of claim 12 wherein said  
displaying comprises displaying a line graph.

14. (original) The method of claim 12 wherein said  
displaying comprises displaying an orbital plot.

15-16. (cancelled)

17. (previously presented) The method of claim 1  
further comprising:

beginning at a subsequent initial moment,  
acquiring said price data during a subsequent first duration

5 and determining a subsequent first range of said price data  
between a minimum value during said subsequent first duration  
and a maximum value during said subsequent first duration; and  
comparing said subsequent first range of said  
price data during said subsequent first duration to an  
10 expected range of said price data during said subsequent first  
duration.

18. (currently amended) The method of claim 17  
further comprising:

beginning at said subsequent initial moment,  
acquiring said price data during a subsequent second duration  
5 of which said subsequent first duration is a multiple and  
determining a subsequent second range of said price data  
between a minimum value during said subsequent second duration  
and a maximum value during said subsequent second duration;  
wherein said comparing said subsequent first range of said  
10 price data during said subsequent first duration to an  
expected range of said price data during said subsequent first  
duration comprises:

~~comparing~~ computing an actual relationship of  
said subsequent first range to said subsequent second range;  
15 and

comparing said actual relationship of said  
subsequent first range to said subsequent second range to an  
expected relationship of said subsequent first range to said  
subsequent second range, and determining from said comparison  
20 of said actual relationship of said subsequent first range to  
said subsequent second range to said expected relationship of  
said subsequent first range to said subsequent second range  
how said system is varying.

19. (currently amended) The method of claim 18  
further comprising repeating, ~~said acquiring, said determining~~

~~and said comparing~~ at multiple additional subsequent initial moments:

- 5                    acquiring said price data during each  
respective subsequent first duration;  
                    acquiring said price data during each  
respective subsequent second duration;  
                    computing a respective actual relationship of  
10 each respective subsequent first range to each respective  
subsequent second range;  
                    comparing each respective actual relationship  
of each respective subsequent first range to each respective  
subsequent second range to a respective expected relationship  
15 of each respective subsequent first range to each respective  
subsequent second range; and  
                    determining from each respective comparison how  
said system is varying.

20. (currently amended) The method of claim 17 further comprising repeating ~~said acquiring, said determining and said comparing~~, beginning at multiple additional subsequent initial moments:

- 5                    acquiring said price data during each  
respective subsequent first duration;  
                    computing a respective actual range of said  
price data between a minimum value during each respective  
subsequent first duration and a maximum value during each  
10 respective subsequent first duration;  
                    comparing each respective actual range during  
each respective subsequent first duration to a respective  
expected range during each respective subsequent first  
duration; and  
15                    determining from each respective comparison how  
said system is varying.



21. (currently amended) The method of claim 20 further comprising repeating, ~~said acquiring, said determining and said comparing~~ at multiple additional sets of multiple initial moments[[,]]:

5                    said acquiring said price data during each  
respective subsequent first duration;  
                    said computing a respective actual range of  
said price data between a minimum value during each respective  
subsequent first duration and a maximum value during each  
10 respective subsequent first duration; and  
                    said comparing each respective actual range  
during each respective subsequent first duration to a  
respective expected range during each respective subsequent  
first duration; wherein:  
15                    ~~said duration differing~~ differs for each said  
set.

22. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

                    means for, beginning at a first initial moment,  
5 acquiring said price data during an initial first duration and  
determining an initial first range of said price data between  
a minimum value during said initial first duration and a  
maximum value during said initial first duration;  
                    means for comparing said first range of said  
10 price data during said initial first duration to a range of  
said price data expected, based on Brownian motion, during  
said initial first duration; and  
                    means for concluding:  
                    ~~when said first range of said price data during~~  
15 ~~said initial first duration equals said range of said price~~  
~~data expected, based on Brownian motion, during said initial~~  
~~first duration, that said system is varying erratically,~~

when said first range of said price data during  
said initial first duration exceeds said range of said price  
20 data expected, based on Brownian motion, during said initial  
first duration, that said system is varying in a trend, and  
when said first range of said price data during  
said initial first duration is less than said range of said  
price data expected, based on Brownian motion, during said  
25 initial first duration, that said system is congesting.

23. (previously presented) The apparatus of  
claim 22 further comprising a Brownian motion standard  
generator; wherein:

said comparing means compares said initial  
5 first range of said price data to a Brownian motion standard  
generated by said Brownian motion standard generator.

24. (cancelled)

25. (currently amended) The apparatus of claim 22  
further comprising:

means for, beginning at said first initial  
moment, acquiring said price data during an initial second  
5 duration of which said initial first duration is a multiple  
and determining an initial second range of said price data  
between a minimum value during said initial second duration  
and a maximum value during said initial second duration;  
wherein:

10 said comparing means ~~compares~~ computes an  
actual relationship of said initial first range to said  
initial second range and compares said actual relationship of  
said initial first range to said initial second range to an  
expected relationship of said initial first range to said  
15 initial second range, ~~and determines from said comparison how~~  
~~said system is varying.~~

26. (currently amended) The apparatus of claim 25 wherein:

5        ~~said means for comparing and determining forms~~  
      computes said actual relationship by forming a ratio of said  
initial first range to said initial second range; and[[:]]

said concluding means:

~~when said ratio equals a square root of said~~  
      ~~multiple, concludes that said system is varying erratically;~~  
      concludes that said system is varying in a  
10 trend when said ratio exceeds [[said]] a square root of said  
      ~~multiple, concludes that said system is varying in a trend;~~  
      and

concludes that said system is congesting when  
      said ratio is less than said square root, ~~concludes that said~~  
15 ~~system is congesting.~~

27. (currently amended) The apparatus of claim 25 further comprising:

      means for, beginning at a subsequent initial  
      moment, acquiring said price data during a subsequent first  
5 duration and determining a subsequent first range of said  
price data between a minimum value during said subsequent  
first duration and a maximum value during said subsequent  
first duration;

      means for, beginning at said subsequent initial  
10 moment, acquiring said price data during a subsequent second  
duration of which said subsequent first duration is said  
multiple and determining a subsequent second range of said  
price data between a minimum value during said subsequent  
second duration and a maximum value during said subsequent  
15 second duration; [[and]]

      means for ~~comparing~~ computing an actual  
relationship of said subsequent first range to said subsequent  
second range; and

means for comparing said actual relationship of  
20 said subsequent first range to said subsequent second range to  
an expected relationship of said subsequent first range to  
said subsequent second range, and for determining from said  
comparison of said actual relationship of said subsequent  
25 first range to said subsequent second range to said expected  
relationship of said subsequent first range to said subsequent  
second range how said system is varying.

28. (previously presented) The apparatus of  
claim 22 further comprising means for displaying said initial  
first range of said price data and said expected range of said  
price data.

29. (original) The apparatus of claim 28 wherein  
said displaying means displays a line graph.

30. (original) The apparatus of claim 28 wherein  
said displaying means displays a orbital plot.

31-32. (cancelled)

33. (previously presented) The apparatus of  
claim 22 further comprising:

means for, beginning at a subsequent initial  
moment, acquiring said price data during a subsequent first  
5 duration and determining a subsequent first range of said  
price data between a minimum value during said subsequent  
first duration and a maximum value during said subsequent  
first duration; and

means for comparing said subsequent first range  
10 of said price data during said subsequent first duration to an  
expected range of said price data during said subsequent first  
duration.

34. (currently amended) The apparatus of claim 33 further comprising:

means for, beginning at said subsequent initial moment, acquiring said price data during a subsequent second duration of which said subsequent first duration is a multiple and determining a subsequent second range of said price data between a minimum value during said subsequent second duration and a maximum value during said subsequent second duration; wherein said comparing means ~~compares~~ computes an actual relationship of said subsequent first range to said subsequent second range and compares said actual relationship of said subsequent first range to said subsequent second range to an expected relationship of said subsequent first range to said subsequent second range, and determines from said comparison of said actual relationship of said subsequent first range to said subsequent second range to said expected relationship of said subsequent first range to said subsequent second range how said system is varying.

35. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

a data feed ~~[[for]]~~ that, beginning at a first initial moment, ~~acquiring~~ acquires said price data during an initial first duration; and

a processor ~~for determining~~ that determines an initial first range of said price data between a minimum value during said initial first duration and a maximum value during said initial first duration; wherein:

said processor compares said first range of said price data during said initial first duration to a range of said price data expected, based on Brownian motion, during said initial first duration; and

said processor concludes:

~~when said first range of said price data during  
said initial first duration equals said range of said price  
data expected, based on Brownian motion, during said initial  
first duration, concluding that said system is varying  
erratically,~~

~~that said system is varying in a trend when  
said first range of said price data during said initial first  
duration exceeds said range of said price data expected, based  
on Brownian motion, during said initial first duration,  
concluding that said system is varying in a trend, and~~

~~that said system is congesting when said first  
range of said price data during said initial first duration is  
less than said range of said price data expected, based on  
Brownian motion, during said initial first duration[[,]]  
concluding that said system is congesting.~~

36. (previously presented) The apparatus of  
claim 35 further comprising a Brownian motion standard  
generator; wherein:

said processor compares said initial first  
range of said price data to a Brownian motion standard  
generated by said Brownian motion standard generator.

37. (previously presented) The apparatus of  
claim 36 wherein said processor applies bootstrapping  
techniques to said acquired price data.

38. (previously presented) The apparatus of  
claim 35 wherein:

said data feed, beginning at said first initial  
moment, acquires said price data during an initial second  
duration of which said initial first duration is a multiple;  
said processor determines an initial second  
range of said price data between a minimum value during said

initial second duration and a maximum value during said  
initial second duration; and

10               said processor compares an actual relationship  
of said initial first range to said initial second range to an  
expected relationship of said initial first range to said  
initial second range, and determines from said comparison how  
said system is varying.

39. (currently amended) The apparatus of claim 38  
wherein said processor forms a ratio of said initial first  
range to said initial second range and:

5               ~~when said ratio equals a square root of said~~  
~~multiple, concludes that said system is varying erratically;~~  
              concludes that said system is varying in a  
trend when said ratio exceeds [[said]] a square root of said  
~~multiple, concludes that said system is varying in a trend;~~  
and

10               concludes that said system is congesting when  
said ratio is less than said square root, ~~concludes that said~~  
~~system is congesting.~~

40. (currently amended) The apparatus of claim 38  
wherein:

5               said data feed, beginning at a subsequent  
initial moment, acquires said price data during a subsequent  
first duration;

              said processor determines a subsequent first  
range of said price data between a minimum value during said  
subsequent first duration and a maximum value during said  
subsequent first duration;

10               said data feed, beginning at said subsequent  
initial moment, ~~acquiring~~ acquires said price data during a  
subsequent second duration of which said subsequent first  
duration is said multiple;

15           said processor determines a subsequent second  
range of said price data between a minimum value during said  
subsequent second duration and a maximum value during said  
subsequent second duration; and

            said processor compares an actual relationship  
of said subsequent first range to said subsequent second range  
20 to an expected relationship of said subsequent first range to  
said subsequent second range, and determines from said  
comparison how said system is varying.

41. (currently amended) The apparatus of claim 35  
further comprising a display ~~for displaying~~ that displays said  
initial first range of said price data and said expected range  
of said price data.

42. (original) The apparatus of claim 41 wherein  
said display displays a line graph.

43. (original) The apparatus of claim 41 wherein  
said display displays a orbital plot.

44-45. (cancelled)

46. (previously presented) The apparatus of  
claim 35 wherein:

            said data feed, beginning at a subsequent  
initial moment, acquires said price data during a subsequent  
5 first duration;

            said processor determines a subsequent first  
range of said price data between a minimum value during said  
subsequent first duration and a maximum value during said  
subsequent first duration; and

10           said processor compares said subsequent first  
range of said price data during said subsequent first duration  
to an expected range of said price data during said subsequent  
first duration.



47. (previously presented) The apparatus of claim 46 wherein:

5 said data feed, beginning at said subsequent initial moment, acquires said price data during a subsequent second duration of which said subsequent first duration is a multiple;

10 said processor determines a subsequent second range of said price data between a minimum value during said subsequent second duration and a maximum value during said subsequent second duration;

15 said processor compares an actual relationship of said subsequent first range to said subsequent second range to an expected relationship of said subsequent first range to said subsequent second range, and determines from said comparison how said system is varying.

48. (currently amended) A method for analyzing price data, representing price in a financial system that varies over time, said method comprising:

5 beginning at an initial moment, acquiring said price data during a ~~first~~ duration of a first length of time and determining a first range of said price data between a minimum value during said ~~first~~ duration of said first length of time and a maximum value during said ~~first~~ duration of said first length of time;

10 determining a second range, expected based on Brownian motion, of said price data during a ~~second~~ duration of a second length of time beginning at said initial moment; and

15 monitoring an instantaneous value of said price data during said ~~second~~ duration of said second length of time and determining that said system is varying in a trend when said instantaneous value is outside said expected second range.

49. (currently amended) The method of claim 48 wherein:

said ~~second~~ duration of said second length of time is a multiple of said ~~first~~ duration of said first length of time; and

said expected second range is a product of said first range and a square root of said multiple.

50-51. (cancelled)

52. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

means for, beginning at an initial moment,  
5 acquiring said price data during a ~~first~~ duration of a first length of time and determining a first range of said data between a minimum value during said ~~first~~ duration of said first length of time and a maximum value during said ~~first~~ duration of said first length of time;  
10 means for determining a second range, as expected based on Brownian motion, of said price data during a ~~second~~ duration of a second length of time beginning at said initial moment; and  
means for monitoring an instantaneous value of  
15 said price data during said ~~second~~ duration of said second length of time and determining that said system is varying in a trend when said instantaneous value is outside said expected second range.

53. (currently amended) The apparatus of claim 52 wherein:

said ~~second~~ duration of said second length of time is a multiple of said ~~first~~ duration of said first length of time; and

said expected second range is a product of said first range and a square root of said multiple.

54-55. (cancelled)

56. (currently amended) Apparatus for analyzing price data, representing price in a financial system that varies over time, said apparatus comprising:

a data feed for, beginning at an initial  
5 moment, acquiring said price data during a ~~first~~ duration of a first length of time and monitoring an instantaneous value of said price data during a ~~second~~ duration of a second length of time beginning at said initial moment; and

a processor for:  
10 determining ~~an initial~~ a first range of said price data between a minimum value during said ~~initial-first~~ duration of said first length of time and a maximum value during said ~~initial-first~~ duration of said first length of time,

15 determining a second range, expected based on Brownian motion, of said price data during a ~~second~~ said duration of said second length of time beginning at said initial moment, and

determining that said system is varying in a  
20 trend when said instantaneous value is outside said expected second range.

57. (currently amended) The apparatus of claim 56 wherein:

said ~~second~~ duration of said second length of time is a multiple of said ~~first~~ duration of said first length of time; and  
5

said expected second range is a product of said first range and a square root of said multiple.

58-59. (cancelled)

60. (withdrawn) A method for offering to subscribers analysis of data that vary over time, said method comprising:

beginning at each of a plurality of initial  
5 moments, acquiring said data during a plurality of respective first durations;

dividing said data into respective portions, each of said respective portions including data for one or more of said plurality of respective first durations;

10 transmitting said data to respective computers operated by at least some of said subscribers at the option of each individual subscriber;

determining at each said respective computer, for each respective first duration in said respective data  
15 portion a respective first range of said data between a minimum value during said respective first duration and a maximum value during said respective first duration;

determining at each said respective computer, for each respective first duration in said respective data  
20 portion a respective expected range of said data during said respective first duration;

collecting said respective determinations of said respective computers;

comparing each respective range of said data  
25 during each respective first duration to each respective expected range of said data during said respective first duration; and

transmitting said comparison to said subscribers.

61. (withdrawn) The method of claim 60 further comprising charging a respective subscription fee to each of said subscribers, said respective subscription fee being lower for a subscriber among said at least some of said subscribers

5 than for a subscriber outside said at least some of said subscribers.

62. (withdrawn) The apparatus of claim 56 wherein said system is a biological system and said data are biological data.

63. (withdrawn) The apparatus of claim 56 wherein said system is a meteorological system and said data are meteorological data.

64. (withdrawn) The apparatus of claim 52 wherein said system is a biological system and said data are biological data.

65. (withdrawn) The apparatus of claim 52 wherein said system is a meteorological system and said data are meteorological data.

66. (withdrawn) The method of claim 48 wherein said system is a biological system and said data are biological data.

67. (withdrawn) The method of claim 48 wherein said system is a meteorological system and said data are meteorological data.

68. (withdrawn) The apparatus of claim 35 wherein said system is a biological system and said data are biological data.

69. (withdrawn) The apparatus of claim 35 wherein said system is a meteorological system and said data are meteorological data.

70. (withdrawn)        The apparatus of claim 22 wherein said system is a biological system and said data are biological data.

71. (withdrawn)        The apparatus of claim 22 wherein said system is a meteorological system and said data are meteorological data.

72. (withdrawn)        The method of claim 1 wherein said system is a biological system and said data are biological data.

73. (withdrawn)        The method of claim 1 wherein said system is a meteorological system and said data are meteorological data.